

Annex to letter dated 5 March 2001 to the European Patent Office concerning International (PCT-) patent application no. PCT/EP00/02751 in the name of Mars B.V.

5 AMENDED DESCRIPTION

EASY-OPEN PEEL SEAL FOR FLEXIBLE PACKAGE

*Ins. a1 >*

10 The invention relates to a package of a flexible material which has been formed into an envelope, which package comprises an access opening, which is closed by means of a seal which has been formed by bonding together two or more contacting layers of the material in a particular area, which package can be opened by

15 pulling apart two bonded-together layers of material in said area, to which end the flexible material is provided with an engagement portion, wherein the portion of the seal area that is positioned closest to said engagement portion has a convex edge. The package

20 usually consists of one or more layers of paper and/or plastic material, which form a container which is sealed at least at one end thereof for the purpose of being opened at that end. The seal has been formed by bonding together areas of the flexible material by heating said

25 areas and/or interpolating an adhesive, so that an airtight seal is obtained. Usually, such a seal forms a straight, elongated strip.

A package of this kind may be used for packaging sweets or candy bars, for example. The package must be easy to

30 open, for example by pulling loose the seal, with the package functioning as a container for the sweets after being opened, from which the sweets can be removed by the user.

35 The drawback of the known package is that a great deal of force must be exerted for pulling apart the bonded layers of material, and that uncontrolled movements resulting from said great exertion of force may lead to

40 the contents falling out of the package, or that the package, once it has been opened, is no longer suitable

for use as a container, for example because it is torn.

European patent application EP 0 343 629 describes a package which is provided with a seal having a convex edge, wherein the engagement portion is positioned in an extra part of the flexible material which extends beyond said seal area, seen from the packaged product. As a result of this, the layers of material will first be pulled apart in a small part of the seal area when the seal is pulled loose, which requires relatively little force. Once said pulling loose has commenced, it can be continued in a larger part of the aforesaid area. Generally, the engagement portion can be recognized by the shape of and/or the print on the package. A drawback of the known packaging of this kind is that it needs an extra engagement portion which extends beyond the seal, seen from the packaged product, which portion is often unwanted from an aesthetic point of view and which causes extra material costs.

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The objective of the invention is to provide a package which is easy to open with less force, and/or wherein the bonded layers can be pulled apart in a controlled manner, without the need to provide a substantial extra engagement portion to the packaging which extends beyond the seal.

*INS. a2 >*

~~In order to accomplish that objective, said engagement portion is positioned in the part of the package which is intended for enveloping the packaged product, and said convex edge is directed inwardly.~~ This makes it possible to realise a seal while using a minimum amount of flexible material. Sufficient flexible material must be present at the location of the engagement portion, however, in order to enable the user to take hold of it with his fingers.

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In one embodiment, said convex edge comprises two

substantially straight edge portions, which include an angle with each other. Preferably, said edge portions bound a V-shaped area. As a result of this arrangement, opening of the seal will commence in the point of the V-shape, using a minimum pulling force, and will then continue in the legs of the V-shape. In another embodiment, the convex edge is substantially curved. The remaining portion of the seal may extend in the form of a straight strip.

10 In one embodiment, said area has substantially the same width along its length, as a result of which the force required for opening the package will remain constant during said opening, which helps to have said opening take place in a controlled manner. In another embodiment, said area is wider near the edges of the access opening than near the engagement portion. This reduces the risk of the package being torn beyond the edges of the access opening upon being opened.

20 Preferably, the seal is substantially in the form of a stripe, in particular a V-stripe, also called a chevron. As a result of this, the access opening extends over a limited area, which makes the package especially suitable for use as a bag-like container after opening.

30 Preferably, the package substantially consists of one piece of flexible material. Thus, a package which is easy to produce and which provides a strong container after opening is obtained.

The invention also relates to a method for producing a package of a flexible material, wherein two or more contacting layers of the material are bonded together in a particular area, in such a manner that the package can be opened by pulling apart two bonded layers of material in said area by engaging said flexible material at the

location of an engagement portion, wherein the part of the area located closest to said engagement portion is provided with a convex edge, wherein said engagement portion is positioned in the part of the package which is intended for enveloping the packaged product.

The invention also relates to a method for packaging a product, wherein the product is enveloped with a flexible material, wherein two or more contacting layers of the material are bonded together in a particular area, in such a manner that the package can be opened by pulling apart two bonded layers of material in said area by engaging said flexible material at the location of an engagement portion, wherein the part of the area located closest to said engagement portion is provided with a convex edge, wherein said engagement portion is positioned in the part of the package which is intended for enveloping the packaged product.

Furthermore, the invention relates to a method for opening a package of a flexible material, which package is closed by means of a seal which has been formed by bonding together two or more contacting layers of the material in a particular area, wherein the bonded material is pulled loose, starting at a portion of the area where the edge of said area has a convex shape, and wherein the bonded material is pulled loose by engaging and pulling the package at a part which is intended for enveloping the packaged product.

Hereafter a number of embodiments of a package will be described by way of illustration, wherein reference is made to the drawing, in which:

Figure 1 is a perspective view of a package;  
Figure 2 is a side view of the package according to Figure 1;

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~~Figure 3 is a perspective view of a package,~~

~~Figure 4 is a perspective view of another embodiment of a package;~~

~~Figures 5 and 6 are front views of packages according to the invention; and Figures 7-10 are front views of further embodiments of packages.~~

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The drawings are essentially schematic representations, wherein like parts are indicated by the same numerals.

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Figure 1 is a perspective view of a package which contains sweets or candy bars, which are packaged in an airtight manner therein. Figure 2 shows the same container in side view. The package consists of container 1 of plastic foil, comprising a bottom 2, four upright walls 3 and a seal 4. Seal 4 is formed by folding the upright walls 3 at their upper ends after the container has been filled with the product to be packaged, in such a manner that the ends will be in contact with each other along a straight strip, and subsequently heating the strip and/or interpolating an adhesive, after which the wall ends are bonded together by compression. Usually, seal 4 consists of four layers of material on the sides as the result of this manner of bonding, whilst it consists of two layers in its central portion.

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The package can be opened by taking hold of it with the fingers near arrows 5, 6 and pulling in the direction of arrows 5, 6. If said pulling takes place with sufficient force, this seal will tear loose, thus opening the package.

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Figure 3 and Figure 4 show in perspective view a package according to the invention. The area of seal 4 thereby has a convex V-shape, seen from the engagement portion, so that if the package is opened in accordance with that which has been discussed with regard to the package according to Figures 1 and 2, seal 4 will come loose

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whilst only a small force is exerted, starting in the point of the V-shape on the upper side of seal 4, and continuing from there to the bottom of the point. Following that, said opening is continued in a controlled manner towards the ends of seal 4.

In these embodiments, the layers of flexible material extend beyond seal 4, thus forming "flaps" 7. Said "flaps" 7 function as an engagement area for opening the package, which is done by engaging the "flaps" 7 with the fingers and pulling in the direction of arrows 5, 6. It will be apparent that a relatively large force is required thereby, because a long edge of the seal is pulled loose along its entire length in one go. In the variant shown in Figure 4, said flaps are made up of a continuous strip, which extends beyond the seal.

Figure 5 is a side view of an embodiment comprising a V-shaped seal without "flaps" 7. Figure 6 shows another embodiment of a package, wherein seal 4 is made up of a substantially straight strip, and wherein an arched or curved seal portion is provided in the central part, which functions as a starting point for opening the package.

Figures 7, 8, 9 and 10 show further embodiments of a package, now provided with "flaps" 7. Furthermore, various possible embodiments of a seal are shown by way of illustration, wherein the edges of the seal area comprise arched or curved portions and straight edge portions, which include an angle with each other. As is shown in Figure 10, it is possible to combine straight edge portions and curved edge portions. The seal forms which are shown in Figures 7 - 10 are similar in that they are all convex, as a result of which opening will commence at the point located closest to the engagement portion, after which said opening will continue in a

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controlled manner towards the ends of the seal area. It is also possible to use these seal forms in the embodiments which do not comprise "flaps", as shown in Figures 5 and 6.

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The above-described embodiments are to be considered examples of a package according to the invention.

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